

Amendments to the Claims:

Please cancel claim 1 and add new claims 2-31. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Canceled)
2. (New) A transmitter coupled to a non-dedicated local area network channel for transmitting non-telephone data packets over the channel, the transmitter comprising:
 - an encoder for encoding each non-telephone data packet to form encoded non-telephone data packets;
 - an interleaver coupled to the encoder for interleaving each encoded non-telephone data packet to form interleaved encoded non-telephone data packets; and
 - a modulator coupled to the interleaver for modulating each interleaved encoded non-telephone data packet to form modulated interleaved encoded non-telephone data packets.
3. (New) The transmitter of Claim 2, wherein the non-dedicated local area network channel is provided by a telephone line.
4. (New) The transmitter of Claim 2, wherein the encoder performs cyclic redundancy check encoding and Reed Solomon encoding on the non-telephone data packets.

5. (New) The transmitter of claim 2, wherein the interleaver includes an array, and wherein each encoded non-telephone data packet is read into the array row-by-row, and each interleaved encoded non-telephone data packet is read out column-by-column.

6. (New) The transmitter of claim 5, wherein the array has a number of columns equal to a size of a codeword of the encoded non-telephone data packet.

7. (New) The transmitter of claim 5, wherein the array has a number of rows equal to the maximum size encoded non-telephone data packet to be handled.

8. (New) The transmitter of Claim 2, wherein each modulated interleaved encoded non-telephone data packet is transmitted over the non-dedicated local area network channel in accordance with Home Phoneline Network Alliance (HPNA) protocols.

9. (New) A receiver coupled to a non-dedicated local area network channel for receiving modulated interleaved encoded non-telephone data packets from the channel, the receiver comprising:

a demodulator for receiving modulated interleaved encoded non-telephone data packets from the non-dedicated local area network channel and demodulating each modulated interleaved encoded non-telephone data packet to form demodulated interleaved encoded non-telephone data packets;

a deinterleaver coupled to the demodulator for deinterleaving each demodulated interleaved encoded non-telephone data packet to form deinterleaved demodulated encoded non-telephone data packets; and

a decoder coupled to the deinterleaver for decoding each deinterleaved demodulated encoded non-telephone data packet to extract a non-telephone data packet.

10. (New) The receiver of Claim 9, wherein the non-dedicated local area network channel is provided by a telephone line.

11. (New) The receiver of Claim 9, wherein the decoder performs cyclic redundancy check decoding and Reed Solomon decoding on the non-telephone data packets.

12. (New) The receiver of claim 9, wherein the deinterleaver includes an array, and wherein each demodulated interleaved encoded data packet is read into the array column-by-column, and each deinterleaved demodulated encoded non-telephone data packet is read out of the array row-by-row.

13. (New) The receiver of claim 12, wherein the array has a number of columns equal to a size of a codeword of the demodulated interleaved encoded non-telephone data packet.

14. (New) The receiver of claim 12, wherein the array has a number of rows equal to the maximum size demodulated interleaved encoded non-telephone data packet to be handled.

15. (New) The receiver of Claim 9, wherein each modulated interleaved encoded non-telephone data packet is received from the non-dedicated local area network channel in accordance with Home Phoneline Network Alliance (HPNA) protocols.

16. (New) A communications circuit for use with a computer for transmitting non-telephone data packets over a non-dedicated local area network channel, the circuit comprising:

an intrapacket encoder residing on a board within the computer for encoding and interleaving non-telephone data packets to produce encoded interleaved non-telephone data packets; and

a controller chip residing on a board within the computer and coupled to a non-dedicated local area network channel;

wherein the controller chip receives encoded interleaved non-telephone data packets from the intrapacket encoder; and

wherein the controller chip modulates the received encoded interleaved non-telephone data packets to produce modulated encoded interleaved non-telephone data packets and transmits these packets over the non-dedicated local area network channel.

17. (New) The communications circuit of Claim 16, wherein the non-dedicated local area network channel is provided by a telephone line.

18. (New) The communications circuit of Claim 16, wherein the intrapacket encoder performs cyclic redundancy check encoding and Reed Solomon encoding on the non-telephone data packets.

19. (New) The communications circuit of Claim 16, wherein the intrapacket encoder performs cyclic redundancy check encoding and Reed Solomon encoding on the non-telephone data packets in software as part of a software driver for a chip set.

20. (New) The communications circuit of claim 16, wherein the intrapacket encoder interleaves a non-telephone data packet by reading the packet into an array row-by-row, and reading the packet out column-by-column.

21. (New) The communications circuit of claim 20, wherein the array has a number of columns equal to a size of a codeword of the non-telephone data packet.

22. (New) The communications circuit of claim 20, wherein the array has a number of rows equal to the maximum size non-telephone data packet to be handled.

23. (New) The communications circuit of Claim 16, wherein each modulated encoded interleaved non-telephone data packet is transmitted over the non-dedicated local area network channel in accordance with Home Phoneline Network Alliance (HPNA) protocols.

24. (New) A communications circuit for use with a computer for receiving modulated encoded interleaved non-telephone data packets from a non-dedicated local area network channel and processing these packets, the circuit comprising:

a controller chip residing on a board within the computer and coupled to the non-dedicated local area network channel, the controller chip receiving the modulated encoded interleaved non-telephone data packets from the non-dedicated local area network channel and demodulating these packets to produce encoded interleaved non-telephone data packets;

an intrapacket decoder residing on a board within the computer;

wherein the intrapacket decoder receives, decodes and deinterleaves encoded interleaved non-telephone data packets sent from the controller chip to extract a non-telephone data packet.

25. (New) The communications circuit of Claim 24, wherein the non-dedicated local area network channel is provided by a telephone line.

26. (New) The communications circuit of Claim 24, wherein the intrapacket decoder performs cyclic redundancy check decoding and Reed Solomon decoding on the encoded interleaved non-telephone data packets.

27. (New) The communications circuit of Claim 24, wherein the intrapacket decoder performs cyclic redundancy check decoding and Reed Solomon decoding on the encoded interleaved non-telephone data packets in software as part of a software driver for a chip set.

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28. (New) The communications circuit of claim 24, wherein the intrapacket decoder deinterleaves the encoded interleaved non-telephone data packet by reading the packet into an array column-by-column, and reading the packet out row-by-row.

29. (New) The communications circuit of claim 28, wherein the array has a number of columns equal to a size of a codeword of the encoded interleaved non-telephone data packet.

30. (New) The communications circuit of claim 28, wherein the array has a number of rows equal to the maximum size encoded interleaved non-telephone data packet to be handled.

31. (New) The communications circuit of Claim 24, wherein each modulated interleaved encoded non-telephone data packet is received from the non-dedicated local area network channel in accordance with Home Phoneline Network Alliance (HPNA) protocols.